

1 depicts the distribution of structure types for all samples. It is apparent that the two  
 2 methods produce rather similar asbestos structure distributions when dusts of similar  
 3 composition are analyzed. The only reasonable explanation for the ASTM method  
 4 producing consistently higher results is the improved collection efficiency gained with the  
 5 higher face velocity at the point of sample collection. Visually this was apparent in the  
 6 field since considerably more dust remained behind on surfaces sampled with the Law  
 7 Engineering method than the ASTM method D 5755-95.

8  
 9 On average it was determined that the ASTM method provides results 11 times greater  
 10 than the Law Engineering protocol. This observation should be considered when  
 11 evaluating previous dust sampling results collected by Law Engineering in the late 1980's  
 12 in these Prudential buildings.

13  
 14 **Table 2. Asbestos Structure Distribution for 30 side-by-side Surface Dust Samples**

<u>Structure Type</u>	<u>Law Method</u>	<u>ASTM Method</u>
Bundles	50 (8.1%)	42 (9.7%)
Clusters	26 (4.2%)	8 (1.8%)
Matrices	267 (43.2%)	170 (39.1%)
Fibers	275 (44.5%)	215 (49.4%)
Totals	618 (100%)	435 (100%)

15

1    **W.    ASBESTOS MANAGEMENT OPTIONS AVAILABLE TO**  
2           **COMMERCIAL BUILDING OWNERS**

3  
4    There are several options available to building owners when developing a policy to  
5    manage asbestos-containing materials in buildings. In the short term, implementation of  
6    an operations and maintenance (O&M) program is necessary. An O&M program is a set  
7    of procedures and practices designed to reduce exposures to in-place asbestos while  
8    continuing to operate the building. Such a program requires specific work practices when  
9    working in the vicinity of asbestos, training of personnel, use of personal protective  
10   equipment, proper disposal techniques, and other elements.<sup>(106)</sup> Prudential has developed  
11   or adopted O&M programs for buildings containing friable asbestos-containing materials.

12  
13   In the long-term, a permanent solution is developed and implemented. For asbestos-  
14   containing fireproofing the options include encapsulation, enclosure, and removal. Of  
15   these, only removal is truly a permanent solution. Encapsulation, the spraying of a sealant  
16   on the fireproofing, does not prevent future damage or delamination, is costly, and may  
17   void the fire rating of the material. Enclosure, an airtight barrier constructed around the  
18   fireproofing, is not a feasible option in the vast majority of the Prudential buildings due to  
19   the lack of space in which to build the enclosures. Enclosures would also be very costly.  
20   The advantages and disadvantages of each option have been reported by the EPA.<sup>(83)</sup>

1 From the viewpoint of an industrial hygienist, removal of the asbestos-containing  
2 fireproofing with substitution of a less hazardous material is preferable. Industrial hygiene  
3 is the science that deals with occupational health hazards and environmental stresses of a  
4 chemical, physical and biological nature. Its focus is the recognition, evaluation and  
5 control of these hazards. When an industrial hygienist considers control options, there  
6 exists a hierarchy. The first option in the hierarchy is elimination of a hazard through  
7 substitution. If this is not feasible, the hazard should be reduced or eliminated through  
8 other engineering controls. If this is not feasible, the hazard is reduced through personal  
9 protective equipment such as respirators. The use of respirators is the last option since it  
10 relies upon workers to use and maintain them properly.<sup>(107)</sup>

11  
12 The EPA requires friable asbestos-containing materials be removed from a building prior  
13 to renovation or demolition activities which will disturb these materials.<sup>(108)</sup> Ultimately, all  
14 the asbestos-containing fireproofing will need to be removed properly from the Prudential  
15 buildings. The real question presented to the building owner is when should the removal  
16 be conducted. The options are immediate removal, phased removal over a period of time,  
17 or removal at the time of demolition.

18  
19 A formal policy for asbestos in Prudential buildings was first adopted in July 1986.<sup>(109)</sup>  
20 While this policy referred to "hazardous substances," asbestos in buildings was one of the  
21 major focuses. The policy called for the following:

22

- 1 1. Investigate existing and perspective properties
- 2 2. Evaluate the scope of the hazard
- 3 3. Notify affected parties
- 4 4. Establish monitoring systems
- 5 5. Remove hazardous substances, if practical or necessary, as expeditiously as
- 6 possible.

7

8 By this time, Prudential had completed a nationwide survey of its investment properties

9 for asbestos, conducted by outside consultants. Concurrent with this policy statement, the

10 Prudential Realty Group established a permanent task force to develop guidelines for

11 handling hazardous substances issues.<sup>(109)</sup>

12

13 In June 1987 the task force issued its "Policy Guidelines and Operating Procedures

14 Manual."<sup>(110)</sup> This manual provided greater detail and guidance for implementing the

15 policy, as well as a structured system of oversight. The following summarizes the

16 guidance provided for asbestos in Prudential Buildings.

- 17
- 18 1. Conduct a bulk sampling survey
  - 19 2. Conduct an exposure and risk assessment
  - 20 3. Implement an Operations and Maintenance Program
  - 21 4. Provide training
  - 22 5. Notify affected parties

- 1           6. Take immediate action (abatement) if there is a current health hazard
- 2           7. Continue inspection/monitoring and anticipate abatement in conjunction with
- 3           renovation activities
- 4           8. Conduct abatement activities in compliance with all OSHA, EPA, state and
- 5           local regulations/guidelines
- 6           9. Use qualified consultants/contractors
- 7           10. Maintain various records

8

9   At this stage of policy development the "exposure and risk assessment" of in-place

10 asbestos-containing materials relied largely on the results of area air sampling. No trigger

11 value was stated in the guidelines delineating a hazardous situation from a non-hazardous

12 one.

13

14   The guidance manual was continually revised and updated. In March 1990 a detailed

15 scope of work for performing bulk sampling and assessments was issued.<sup>(111)</sup> This

16 document makes it clear that Prudential will follow the bulk sampling procedures outlined

17 in the EPA AHERA regulations for schools. This document further requires a written

18 material assessment be performed based on the same criteria used in the AHERA

19 regulations. The document does not require the material be placed into one of the seven

20 AHERA assessment categories. A similar specification guideline was also issued for

21 asbestos abatement projects in 1990.<sup>(112)</sup>

1 In May 1993 the guidance manual underwent a further revision that provided additional  
2 guidance regarding types of abatement and when to perform abatement.<sup>(113)</sup> The  
3 document lists four instances when asbestos abatement will generally be required. These  
4 are as follows:

- 5  
6 1. health hazard as determined by a consultant  
7
- 8 2. federal or local regulations (e.g., in conjunction with demolition or a building  
9 or other disturbance of the ACM)  
10
- 11 3. market forces (e.g., tenants will not lease the space unless the ACM is  
12 removed)  
13
- 14 4. a cost-benefit analysis indicates it is the most appropriate choice (e.g., removal  
15 prior to renovation or installation of a sprinkler system may be more cost  
16 effective and safer than working around the material)  
17

18 Throughout the evolution of the Prudential asbestos policy, emphasis is placed on the fact  
19 that each building is unique and decisions regarding asbestos should be evaluated and  
20 made on a case-by-case basis. It is also recognized that state asbestos regulations may  
21 mandate certain procedures in one building while others may be required in a different  
22 state.

1  
2 In general, the approach in the Prudential buildings has been a phase-out of the asbestos-  
3 containing fireproofing over time. Generally this has been done in conjunction with  
4 planned renovation activities. In a 1990 EPA guidance document the EPA stated the  
5 following.

6  
7 Removal of ACM may also be appropriate when performed in conjunction  
8 with major building renovations, or as part of long-term building  
9 management policies (such as staged removal in conjunction with  
10 renovations over the life of the building, as covered by the EPA NESHAP  
11 requirements for removal before demolition or renovation).<sup>(93)</sup>

12  
13 One obvious exception to this policy concerns the Prudential buildings in Short Hills, NJ.  
14 Due to the planned imminent demolition of the building, immediate complete removal was  
15 the only option available. In the case of the Hunt Valley Marriott the fireproofing  
16 removed was that which was judged to be in poor condition and/or readily accessible. The  
17 remaining fireproofing was either inaccessible or was encapsulated and enclosed to  
18 prevent fiber release. There exists a similar situation for the perimeter columns at  
19 Chatham Center.

20  
21 The general approach to asbestos-containing materials in these Prudential buildings is  
22 similar to and consistent with the actions of other large building owners and managers in

1 the United States. A 1989 study sponsored by EPA reported that approximately 50% of  
2 the buildings in the survey had been inspected for asbestos.<sup>(114)</sup> In those buildings where  
3 asbestos was found, 75% had conducted same asbestos abatement actions. The majority  
4 of these were performed in conjunction with renovation activities.

5  
6 Many owners and managers of large buildings evolved policies similar to Prudential during  
7 the late 1980s. Examples include the General Services Administration, the Defense  
8 Department, and the Centers for Disease Control. Each of these owners inspected their  
9 facilities for asbestos, implemented an operations and maintenance program, and have  
10 conducted removal of fireproofing and other asbestos-containing materials. In most  
11 instances the removal was performed in conjunction with building renovation activities.

12  
13 Documents related to asbestos management procedures followed by W.R. Grace &  
14 Company, U.S. Mineral Products Company, and U.S. Gypsum were reviewed.  
15 Depositions of representatives from these companies were also reviewed. Discussed  
16 below are summaries of policies and procedures supported by examples of asbestos  
17 management activities in their buildings.

18  
19 W.R. Grace has established a policy regarding asbestos-containing materials in Grace  
20 Premises. Mr. Harry Eschenbach, Director of Health, Safety and Toxicology for W.R.  
21 Grace & Company, indicated that asbestos abatement projects have been conducted in 100



1 to 150 Grace facilities. In some of the larger facilities, asbestos abatement has been done  
2 in numerous locations.<sup>(115)</sup>

3  
4 The types of asbestos-containing materials (ACM) that have typically been removed  
5 include fireproofing, floor tile, thermal system insulation, gaskets and transite. Removal  
6 has been conducted when ACM is damaged or deteriorated, in association with  
7 renovations, and prior to demolition. Mr. Eschenbach indicated there were occasions  
8 when ACM which was in good condition was removed at the same time as damaged ACM  
9 because it was cost effective.<sup>(115)</sup>

10  
11 The general factors considered in deciding to remove ACM include government  
12 regulations, the condition of the material, and the potential for exposure to building/facility  
13 occupants.<sup>(115)</sup>

14  
15 Mr. Eschenbach acknowledged that it is Graces' responsibility under OSHA to inform  
16 employees about the materials they work with. This is done at the Grace facilities either  
17 by a facility survey to identify ACM or a "piece-by-piece" basis as situations arise.<sup>(115)</sup>  
18 W.R. Grace provides training at its facilities to employees who work around ACM. This  
19 includes maintenance personnel who work above drop ceilings where asbestos-containing  
20 fireproofing is on the structural steel and/or the deck. The degree of training depends on  
21 the type of work performed.<sup>(115)</sup>

22

1 A review of Grace documents pertaining to removal of ACM in various facilities provides  
2 some examples of the circumstances under which asbestos removal was conducted in  
3 Grace premises.

4  
5 A September 29, 1986 memorandum by H.A. Eschenbach outlines his conclusions  
6 regarding fireproofing material at the Bridgewater, New Jersey facility. Mr. Eschenbach  
7 had visited the facility on September 25 to inspect the fireproofing and collect samples.<sup>(116)</sup>

8  
9 Mr. Eschenbach described the material as containing 15% chrysotile asbestos, mineral  
10 wool and some cellulosic fibers. "The material is extremely friable which means it falls  
11 from the beams and ceiling at the slightest touch."<sup>(116)</sup>

12  
13 Mr. Eschenbach recommended removal of the material. "Eventually, it will have to be  
14 removed -- either because of governmental regulation or because its bonding abilities  
15 deteriorate to the point that it can no longer be ignored. Further, continued use of the  
16 area, especially if it involves construction of rooms and storage areas with ancillary wiring  
17 changes and other modifications, will be much more expensive in order to work around  
18 the asbestos-containing material with minimal worker exposure. Asbestos-containing  
19 material as friable as this is mandates a "management program." This involves, among  
20 other things, periodic air sampling to make sure that exposure levels remain low and a  
21 system of permits to preclude any work which might disturb the asbestos-containing  
22 material from being done without adequate safeguards and training of the workers

1 involved. Removal will allow much greater freedom in making use of the basement area  
2 and eliminate the need for ongoing elaborate inspection and control systems with their  
3 burdensome administration requirements.”<sup>(116)</sup>

4  
5 An October 13, 1988 memorandum describes the subsequent asbestos removal project  
6 conducted at the Baker & Taylor, Bridgewater, NJ facility (a Grace company).<sup>(117)</sup>  
7 Approximately 5,600 square feet of fireproofing (15-25% chrysotile) applied to the metal  
8 decking of the ceiling in the first floor storage/mechanical room was removed. The memo  
9 indicates that air testing conducted on several occasions was 0.002 f/cc. “These readings  
10 indicated that the air did not have any asbestos fibers, and that the air was equivalent to  
11 outside air.”<sup>(117)</sup>

12  
13 The memo states that although air testing indicated no problem and there were no existing  
14 regulations requiring removal, Baker & Taylor’s senior management felt that “We should  
15 remove the material, just to be on the safe side.” “The other alternative, encapsulation of  
16 the offending area, was rejected because it was merely a stopgap measure. Management  
17 opted for a long-term solution, rather than a short term plan.”<sup>(117)</sup>

18  
19 Baker & Taylor issued Purchase Order 8189 to Eastern Environmental Services of the  
20 Northeast, Inc. for \$63,570 to conduct the removal work and provide \$10 million of  
21 Occurrence General Liability Coverage.<sup>(118)</sup>

1 Asbestos was removed in conjunction with renovation activities at the W.R. Grace  
2 headquarters building in New York. Proposals were submitted by Primo Construction,  
3 Inc. to W.R. Grace & Co. for construction cost for the 46<sup>th</sup> floor alteration at 1114  
4 Avenue of the Americas in 1987.<sup>(119)</sup> The proposals indicate the alteration involved a  
5 variety of general contract work such as drywall, ceilings, taping and cleaning, electrical,  
6 painting, carpeting and base, and demolition and asbestos removal. The proposals indicate  
7 an allowance of \$40,000 to \$45,000 was made for asbestos removal and related work in  
8 the Conference Room on the 46<sup>th</sup> Floor.

9  
10 A letter from Brian J. Smith, Senior Vice President of W.R. Grace & Co. to Mr. John  
11 O'Brien of Primo Construction indicates that the project was approved.<sup>(119)</sup> It specifically  
12 references the 46<sup>th</sup> floor Conference Room where asbestos removal was scheduled to be  
13 conducted on October 8-12, 1987.

14  
15 Following this abatement activity, on December 4, 1987 an evaluation was made of  
16 procedures for incidental contact with asbestos-containing materials in the Headquarters  
17 Building of W.R. Grace & Company.<sup>(120)</sup> This evaluation was conducted by Peter L.  
18 Zavon, a Certified Industrial Hygienist with Agatha Corporation.

19  
20 The evaluation was limited to floors 4, 5 and 41-48, which were the floors occupied by  
21 W.R. Grace & Company. The evaluation included observation of telephone technicians'  
22 work and a discussion with W. R. Grace personnel of other activities conducted above the

1 suspended ceiling. Personal air sampling was performed on telephone technicians as they  
2 accessed the space above the suspended ceiling to pull telephone wires. In addition to  
3 telephone company personnel, the report indicated some or all of the five maintenance  
4 staff might have need to work above the ceiling.

5

6 The report noted that fireproofing reported to contain asbestos was sprayed on beams and  
7 slab decking. Fiberglass, tongue-in-groove tiles formed a suspended ceiling about three  
8 feet below the slab. Small pieces of fireproofing were seen on the upper surfaces of the  
9 tile. All tiles were considered potentially contaminated.

10

11 Recommendations listed in the report included establishment of formal Respiratory  
12 Protection and Asbestos Operations and Maintenance Programs. In addition, more refined  
13 techniques for entry above the suspended ceiling were suggested.<sup>(120)</sup>

14

15 A W.R. Grace & Company memo from P.J. Walsh to R.P. Turner discusses the need to  
16 remove asbestos-containing insulation from the underside of the roof and peaked wall  
17 areas at both ends of the dry storage warehouse (Bldg. # 10) at the North Bergen, NJ  
18 facility. Insulation was also applied on the east and west walls to a level 4.5 feet down  
19 from the top of the wall. The memo indicates the ¾ inch thick insulation was composed  
20 of mineral wool and chrysotile asbestos.<sup>(121)</sup>

21

1 The insulation had been damaged by forklift activities and there was concern that the  
2 insulation could fall to the floor and be spread around the warehouse on the fork truck  
3 tires without the operator being aware of it. The memo also indicates make-up air was  
4 drawn from inside the building at the base of one of the sprayed walls and air movement in  
5 the area was substantial. "Due to the damage and the material's highly friable nature,  
6 removal seems to be the most viable alternative."<sup>(121)</sup> The memo also discusses the  
7 differences between cementitious and fibrous asbestos-containing products with respect to  
8 management options.

9  
10 A document titled *Airborne Asbestos Monitoring*, W.R. Grace, North Bergen, New Jersey  
11 was prepared for Joe Miller of *Finishing Touch Asbestos Abatement Corporation, Inc.*<sup>(122)</sup>  
12 This document indicates air monitoring was conducted in conjunction with asbestos  
13 removal in Warehouse No. 10, North Bergen, NJ on October 1, 1986. *Finishing Touch*  
14 had submitted a proposal on June 11, 1986 for removal of approximately 5,780 ft<sup>2</sup> of  
15 asbestos containing insulation from the underside of the roof and beams in the warehouse  
16 storage area at North Bergen.<sup>(123)</sup> The proposed removal price was \$31,450.

17  
18 A request was made for appropriations to remove asbestos insulation from the old #2 and  
19 #3 festoons in the Quakertown, PA facility in 1987.<sup>(124)</sup> The content of the insulation was  
20 reported as 80-90% asbestos in a ratio of 8:1 chrysotile and Amosite. The request  
21 indicated that much of the insulation was damaged. "In light of the fact that both pieces of

1 equipment are permanently idle we propose to have all insulation removed and disposed of  
2 by a certified asbestos specialist.”<sup>(124)</sup>  
3

4 A purchase order was issued to Asbestos Removal and Hazards Control to remove the  
5 insulation from the festoons and transite paneling from exterior oven walls and partition  
6 walls between ovens.<sup>(125)</sup> The cost for this work was \$33,468.  
7

8 A deposition taken of Mr. James P. Verhalen on September 21, 1995 indicated that U.S.  
9 Mineral had no formal written policy with regard to asbestos in company owned buildings.  
10 When asked, “Does U.S. Mineral Products Company ever believe that it’s appropriate to  
11 remove asbestos-containing material during renovation?” Mr. Verhalen replied,  
12 “Sometimes you have to. There is no avoiding it. And sometimes you have to. I think it’s  
13 foolish to remove asbestos-containing materials if you don’t have to.” Mr. Verhalen cited  
14 the following example of when ACM would have to be removed. “If ACM is applied to a  
15 ceiling and the ceiling is going to be removed, the ACM must be removed.”<sup>(126)</sup>  
16

17 When asked if U.S. Mineral believes there are times when it is appropriate to abate and  
18 remove asbestos-containing fireproofing material from a building, Mr. Verhalen replied  
19 that generally, U.S. Mineral supports the Federal government’s position on operations and  
20 maintenance (in-place management) and removal. “Therefore, circumstances where it’s  
21 safe and sound and economical and practical to remove asbestos-containing materials.”<sup>(126)</sup>  
22

1 When asked if U.S. Mineral held the position that no precaution need to be taken when  
2 ACM is disturbed during renovation, Mr. Verhalen replied "No".<sup>(126)</sup> He indicated that  
3 U.S. Mineral supports the maintenance and operations regulations that are federally  
4 required and the EPA Greenbook. He stated that these regulations are "practical, logical  
5 and safe."<sup>(126)</sup> Mr. Verhalen also stated that U.S. Mineral supports monitoring in-place  
6 ACM as part of the Federal government program. "Monitoring I believe is always  
7 desirable."<sup>(126)</sup>

8  
9 U.S. Mineral monitored ACM in its own building in the early 1970's when the transition  
10 was taking place between asbestos and non-asbestos products. Initially, just air testing  
11 was done. Later written procedures for air monitoring were developed when the  
12 government programs became more formal. In recent years a map was drawn of the plant  
13 and locations of asbestos-containing material were identified.

14  
15 According to Mr. Verhalen, there are two U.S. Mineral office buildings that have  
16 asbestos-containing material above suspended ceiling systems and "they're not subject to  
17 any exposure or risk." Air sampling for asbestos was done in late 1994 or early 1995 at  
18 the Stanhope office which has Cafco Heat Shield applied to a metal skin roof. The results  
19 were negative. However, monitoring is done if someone goes above the suspended  
20 ceiling.

21



1 All ACM was removed in approximately June of 1995 from factory metal skin buildings.  
2 The metal skins on the Butler buildings needed to be replaced. According to Mr.  
3 Verhalen, it was necessary prior to replacing the metal skins to remove the asbestos.<sup>(126)</sup>  
4 Other removals conducted at U.S. Mineral facilities include thermal system insulation from  
5 a boiler that was replaced (1987, 1989) and removal of ACM in conjunction with a roof  
6 replacement (approx. 1990).<sup>(126)</sup>

7  
8 In May 1984 U.S. Gypsum (USG) issued a document to all US plants titled "Managing an  
9 Asbestos Control Program, Maintaining in Place".<sup>(127)</sup> The memo attached to the  
10 guidelines stated, "The past use of asbestos in insulation, and in other products, presents a  
11 problem for plants, both in maintaining safe conditions in areas where the material was  
12 used, and in its removal when necessary. The objectives in any asbestos control program  
13 are to protect all persons from exposure to airborne fibers in all sections where asbestos is  
14 present, and if removal is necessary, to remove and dispose of the material in the manner  
15 prescribed by Federal Regulations."<sup>(127)</sup> These guidelines directed plants to survey and  
16 identify ACM; identify ACM that appeared to be damaged or needed repair; repair  
17 material that could be repaired; and if material was damaged beyond repair it was to be  
18 removed.

19  
20 An Asbestos Compliance Guide dated February 18, 1986 was distributed to all plant  
21 managers. This guide provided instructions on conducting renovation and demolition  
22 work involving ACM. This document was revised on June 22, 1987 to include a re-

1 statement of the Corporation's policy to maintain asbestos-containing materials in place,  
2 unless removal is necessary.<sup>(128)</sup> In the "Purpose" section it is stated, "The intent of these  
3 guidelines is to assist plant management in situations where removal is necessary. This  
4 includes preparations for capital installations, revisions of equipment arrangements or  
5 where asbestos-containing material is damaged beyond repair."<sup>(128)</sup>

6  
7 At least 15 different removal projects took place between July 1983 and February of 1985.  
8 In May of 1985 there were numerous capital expansion projects at USG plants which  
9 required ACM removal.<sup>(129)</sup>

10  
11 A July 9, 1984 memorandum from M.J. Bagel to S.T. Hadley of USG provides  
12 information on a seminar by the Building Owners Managers Association titled "Asbestos  
13 In Office Buildings - A Tenant's Problem, and an Owner's Problem."<sup>(130)</sup> At the end of  
14 the memorandum Mr. Bagel states, "I believe the above provides sufficient information to  
15 alert management to the fact that there is a potential problem in buildings that contain  
16 asbestos materials. On the basis of this information I believe that a meeting should be held  
17 as to what steps if any will be taken should asbestos material be found in the USG  
18 building."<sup>(130)</sup>

19  
20 The Headquarters Building at South Wacker Drive in Chicago contains Firecode  
21 fireproofing. A building committee was formed to handle asbestos problems at the  
22 Headquarters Building. A document titled "USG Building, Interim Report, Modifications

1 to Permit Interior Work" introduced in Mr. May's deposition describes the situation: "A  
2 problem identified with doing any above ceiling work on floors two through 16 is that  
3 when the fireproofing insulation is disturbed, as by changing pipes, wiring or supports for  
4 ducts, ceiling, lighting or other utilities, installing partitions within the plenum to isolate a  
5 space for separate air-conditioning and the like, asbestos fibers contained in the  
6 fireproofing insulation may be released. This can be caught up in the circulating air within  
7 the plenum and thereby distributed to the entire floor, recirculated through the return  
8 ducts and ultimately spread throughout the entire building."<sup>(129)</sup> USG called upon Dr.  
9 Morton Corn to assist them in dealing with the ACM in the Headquarters Building.<sup>(131)</sup>  
10 Clayton Environmental conducted air monitoring at the Headquarters Building on January  
11 4-6, 1985. Eighty samples were collected and analyzed by phase contrast and  
12 transmission electron microscopy.<sup>(132)</sup>

13

14 A memo dated September 2, 1987 from D.E. Warrick to J.D. Cornell discusses the need  
15 for a written facility plan relating to the in-place asbestos-containing material in the  
16 Headquarters Building.<sup>(133)</sup> Mr. Warrick stated, "I would feel much better if we had a  
17 written plan to be followed by our own maintenance staff as well as outside workers."<sup>(133)</sup>

18

19 In summary, the procedures for management of asbestos in buildings which are used by  
20 W.R. Grace & Company, U.S. Mineral Products Company, and U.S. Gypsum are similar  
21 to those implemented by Prudential. All have conducted inspections in their buildings,

- 1 have instituted asbestos control procedures, and have removed asbestos-containing
- 2 materials in conjunction with renovation and demolition activities.

1    **X.    REGULATIONS**

2  
3    The management and removal of the asbestos-containing fireproofing in the Prudential  
4    buildings are subject to numerous federal, state and local regulations. At the federal level  
5    the two major regulations are the Occupational Safety and Health Administration (OSHA)  
6    asbestos standard (29 CFR 1926.1101) and the EPA asbestos NESHAP standard.<sup>(134, 135)</sup>

7    In addition, the US Department of Transportation (DOT) standards for the transportation  
8    of hazardous materials impact the buildings as well as the EPA Asbestos Hazard  
9    Emergency Response Act (as amended) (AHERA) regulations which pose additional  
10    burdens on the buildings.<sup>(136, 137)</sup>

11  
12    The newly revised OSHA asbestos standard has further reduced the permissible exposure  
13    limit (PEL) to 0.1 f/cc based on an 8-hour, time-weighted average (TWA).<sup>(134)</sup> This  
14    standard also requires work practices (regardless of exposure concentration) be  
15    implemented when working around or on asbestos-containing materials. It was noted by  
16    OSHA in the preamble to the current revision that significant risk remains at the 0.1 f/cc  
17    level.

18  
19    The new OSHA asbestos standard provides a classification of work activities. Class I  
20    work includes removal of surfacing materials (such as fireproofing) and thermal system  
21    insulation (such as pipe and boiler insulation). Class II work includes removal of asbestos-  
22    containing materials such as flooring, wallboard and roofing products. Class III work

1 includes repair and maintenance operations where ACM is likely to be disturbed. Class IV  
2 work includes clean-up of asbestos waste and debris.<sup>(134)</sup>

3

4 The work practices required under the OSHA asbestos standard are progressively more  
5 stringent, with Class IV work the least stringent, and Class I work the most stringent. The  
6 removal of fireproofing from a building is Class I work. This work must be conducted by  
7 trained workers and supervisors, employ a negative pressure containment system, provide  
8 for the use of respirators and protective clothing, and numerous other requirements.<sup>(134)</sup>

9

10 Custodial and maintenance activities which involve asbestos-containing fireproofing  
11 generally fall into Class III or Class IV work. Class III work usually requires isolation of  
12 the work area, use of respirators, specific work practices, a competent person (as defined  
13 by OSHA) on site, and trained employees and supervisors. Class IV work requires trained  
14 employees and specific work practices but does not mandate the use of respirators.<sup>(134)</sup>

15

16 The new OSHA standard contains numerous other provisions including notification and  
17 labeling requirements, medical surveillance of employees, decontamination procedures,  
18 testing requirements, and waste disposal procedures. The standard represents the latest  
19 revision to the OSHA asbestos standards providing for greater stringency in the  
20 requirements. It lowered the permissible exposure limit (PEL) to 0.1 f/cc from 0.2 f/cc (8-  
21 hour, TWA) which had been in effect since July 1986. Prior to this time the PEL was 2  
22 f/cc, expressed as an 8-hour, TWA.

1

2 The EPA NESHAP asbestos standard has likewise evolved and become more stringent  
3 over the years.<sup>(135)</sup> In summary, the standard requires building owners and operators to  
4 properly remove friable asbestos-containing materials prior to renovation or demolition  
5 activities which will disturb these materials. It further regulates the method of removal  
6 and disposal of the asbestos waste.<sup>(135)</sup>

7

8 In addition to the federal asbestos regulation, all of the buildings discussed in this report  
9 were, or are subject to one or more state asbestos regulations. Like the federal  
10 regulations, the state asbestos regulations have evolved over the years, beginning in the  
11 mid-1980s.

12

13 The provisions of the state regulations have been summarized repeatedly by the National  
14 Conference of State Legislatures (NCSL) under a grant from the EPA.<sup>(137, 138)</sup> The Bureau  
15 of National Affairs (BNA) has also provided a history of early state asbestos  
16 regulations.<sup>(139)</sup> Certain cities and localities, such as New York City, Dallas, Philadelphia,  
17 and Allegheny County (Pittsburgh) also passed regulations regarding asbestos in buildings.

18

19 Among these regulations the common issue was the provision for certification of  
20 individuals who perform various asbestos-related activities. In many states formal  
21 licensing programs were established. Initially, some programs only applied to school  
22 buildings. However, when the EPA AHERA regulations were amended, public and

1 commercial buildings were included nationwide in the Model Accreditation Plan (except  
2 for Management Planners).<sup>(140)</sup>

3  
4 The Prudential buildings discussed in this report contracted maintenance and renovation  
5 work. The state regulations required work involving the disturbance of asbestos materials  
6 be performed by certified or licensed personnel. Accordingly, it became common practice  
7 for only certified workers to conduct asbestos activities in the vicinity of the fireproofing  
8 in Prudential buildings.

9  
10 Some states were also delegated authority from OSHA and EPA to implement and enforce  
11 their own OSHA asbestos standard and NESHAP standard. For these Prudential  
12 buildings, the states of California, Maryland, Michigan, Minnesota, and New York have  
13 state OSHA programs. In these states, the regulations must be at least as stringent as the  
14 federal standard. Most states adopted the federal OSHA asbestos standard(s) with little  
15 modification. However, using California as an example, CAL-OSHA redefined an  
16 asbestos-containing material as greater than 0.1% asbestos, and require all asbestos  
17 workers to be registered with the agency.<sup>(141, 142)</sup>

18  
19 California also has adopted, and revised the EPA asbestos NESHAP standard. For  
20 Embarcadero I and II, located in San Francisco, they must comply with the Bay Area Air  
21 Quality Management District (BAAQMD) NESHAP requirements.<sup>(143)</sup> This regulation



1 significantly lowers the threshold for amounts of friable asbestos involved in renovation or  
2 demolition activities.

3

4 City regulations have also impacted Prudential's management of asbestos in their  
5 buildings. New York and Philadelphia's comprehensive asbestos in buildings regulation  
6 have no threshold amounts before they are applicable.<sup>(144 - 146)</sup> The City of Dallas has  
7 adopted the rules of the Texas Air Control Board.<sup>(147 - 149)</sup>

8

9 The multitude of federal, state and local regulations creates difficulty for large building  
10 owners and operators with holdings in many states and localities. At the building level, it  
11 is necessary to develop a site-specific plan to achieve compliance with the regulations. At  
12 the national level, policies must be appropriate and flexible to allow for provisions of  
13 various regulations to be met.

1 IV. CONCLUSIONS

2

3 The following conclusions are based on site visits to the Prudential buildings, results of  
4 bulk, air, dust and debris samples, interviews with building management representatives,  
5 and reviews of asbestos-related building documents applicable standards, regulations,  
6 guidance and research.

7

8 1. The spray-applied asbestos-containing fireproofing currently or formerly present on  
9 structural steel (and/or the decking) is friable.

10

11 2. In all buildings assessed pursuant to the EPA assessment protocol, the fireproofing  
12 was in the vast majority of areas rated as "damaged friable surfacing asbestos-  
13 containing building materials."

14

15 3. In all buildings assessed, the original asbestos-containing fireproofing had both  
16 physical damage and damage due to deterioration. Instances of water damage and  
17 delamination were evident at some locations.

18

19 4. In all buildings assessed and in which testing was performed it is concluded that  
20 asbestos has released from the fireproofing. This asbestos dust and debris has  
21 accumulated and resulted in significant contamination of building surfaces.

22

1 5. Studies have demonstrated that routine maintenance, custodial, and renovation  
2 activities that disturb in-place fireproofing or accumulated dust and debris from the  
3 fireproofing can result in elevated airborne asbestos exposure to the workers and  
4 others in the vicinity of the work.

5

6 6. Air sampling data from these Prudential buildings demonstrates that elevated  
7 exposures have occurred among workers performing maintenance and renovation  
8 activities.

9

10 7. These Prudential buildings are subject to the federal OSHA standard, EPA asbestos  
11 NESHAP standard, the applicable state regulations for the states in which the  
12 buildings are located, and local (city and county) ordinances for some buildings.

13

14 8. It has been necessary and prudent for Prudential to develop and implement asbestos  
15 management plans, including asbestos operations and maintenance programs to  
16 continue operating these buildings.

17

18 9. The removal of the asbestos-containing fireproofing following a phased approach has  
19 been, and continues to be, appropriate and reasonable.

20

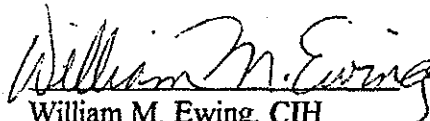
1 10. The Prudential asbestos policy, and implementation of that policy is consistent with  
2 applicable regulations, standards, guidelines, and the actions of other major property  
3 owners.

4

5 This report prepared by:

6

7

  
William M. Ewing, CIH  
Technical Director





**Asbestos Abatement Services, Inc.**

11 North Parkway Square ■ 4200 Northside Parkway, N.W.  
Atlanta, Georgia 30327 ■ (404) 264-9053

November 18, 1987

Mr. Steve Beverly  
Property Manager  
1800 Century Blvd., Suite 1500  
Atlanta, Georgia 30345

Dear Mr. Beverly:

Please find enclosed the results of analysis for air samples collected during the asbestos abatement project at 2200 Century Blvd. The samples were collected on November 6, 7 and 8, 1987, by Mr. Anthony Bass of Asbestos Abatement Services, Inc.

Personal air samples were collected during the abatement procedures. The results of analysis for these personal samples indicated airborne fiber concentrations ranging from 0.065 fibers per cubic centimeter (f/cc) of air too "overloaded" and unable to be analyzed.

The results of analysis for air samples collected inside the mechanical room during preparation activities indicated airborne fiber concentrations of less than 0.002 f/cc and 0.002 f/cc of air.

The results of analysis for air samples collected outside the work area are as follows: Samples PCM 5 & 6 were collected on November 7 and 8 respectively. Analysis of these samples indicated airborne fiber concentrations of less than 0.001 f/cc and 0.004 f/cc. Sample PCM 8 was collected outside the decontamination chamber on November 8. Analysis of this sample indicated less than 0.002 f/cc of air.

Washington, D.C.

■ Atlanta

■ New York

HEA-CENT-00109

A John J. Kirlin Company

PIS 4010579

November 18, 1987  
Page 2

Asbestos Abatement Services, Inc. appreciates the opportunity to work with you on this project and we look forward to working with Property Management Systems in the future. If you have any questions or require additional information regarding the results presented here, please feel free to contact Mr. John Dietrichs or me.

Sincerely,

A handwritten signature in dark ink, appearing to read "Dennis Popham", with a long horizontal line extending to the right.

Dennis Popham  
Project Manager

DP/jr  
Enclosure

HEA-CENT-00110

PIS 4010580

**Asbestos Abatement Services, Inc.**

11 North Parkway Square ■ 4200 Northside Parkway, N.W. ■ Atlanta, GA 30357-3020 ■ (404) 264-9053

**AIR SAMPLE DATA SHEET**

AASI Job No.: 72033 Date: 11/6/87  
 Collected By: Tony Bass Analyzed By: Geo-Environmental  
 Couriered By: AASI Date Analyzed: 11/7/87

PCM/1	LV-2	2.7 L/M	1030	2000	Less than 0.002 f/cc
Sample No.	Pump No.	Flow Rate	Time On	Time Off	Results

Area sample - Inside mechanical room, North wall during preparation.

Location \_\_\_\_\_

PCM/2	LV-5	2.7 L/M	1035	2005	0.002 f/cc
Sample No.	Pump No.	Flow Rate	Time On	Time Off	Results

Area sample - Inside mechanical room, South wall during preparation.

Location \_\_\_\_\_

Sample No.	Pump No.	Flow Rate	Time On	Time Off	Results
------------	----------	-----------	---------	----------	---------

Location \_\_\_\_\_

Sample No.	Pump No.	Flow Rate	Time On	Time Off	Results
------------	----------	-----------	---------	----------	---------

Location \_\_\_\_\_

Sample No.	Pump No.	Flow Rate	Time On	Time Off	Results
------------	----------	-----------	---------	----------	---------

Location \_\_\_\_\_

Sample No.	Pump No.	Flow Rate	Time On	Time Off	Results
------------	----------	-----------	---------	----------	---------

Location \_\_\_\_\_

Sample No.	Pump No.	Flow Rate	Time On	Time Off	Results
------------	----------	-----------	---------	----------	---------

Location \_\_\_\_\_

HEA-CENT-00111

Sampling Media: Air Analyze For: PMS White & Associates

White: Job

Yellow: Lab

Pink: Client

PIS 4010581



**Asbestos Abatement Services, Inc.**

11 North Parkway Square ■ 4200 Northside Parkway, N.W. ■ Atlanta, GA 30357-3020 ■ (404) 264-9053

**AIR SAMPLE DATA SHEET**

AASI Job No.: 72033 Date: 11/7/87  
 Collected By: Tony Bass Analyzed By: Geo-Environmental  
 Courtered By: AASI Date Analyzed: 11/8/87

PCM/3	LV-1	2.7 L/M	0905	1610	0.065 f/cc
Sample No.	Pump No.	Flow Rate	Time On	Time Off	Results

Personal sample - Inside mechanical room during gross removal.

Location \_\_\_\_\_

PCM/4	LV-4	2.7 L/M	0815	2000	Overloaded
Sample No.	Pump No.	Flow Rate	Time On	Time Off	Results

Area sample - Inside mechanical room, South end during gross removal.

Location \_\_\_\_\_

PCM/5	LV-3	2.7 L/M	0820	2016	Less than 0.001 f/c
Sample No.	Pump No.	Flow Rate	Time On	Time Off	Results

Area sample - Outside the work area, Inside the clean room of the decontamination chamber.

Location \_\_\_\_\_

Sample No.	Pump No.	Flow Rate	Time On	Time Off	Results
------------	----------	-----------	---------	----------	---------

Location \_\_\_\_\_

Sample No.	Pump No.	Flow Rate	Time On	Time Off	Results
------------	----------	-----------	---------	----------	---------

Location \_\_\_\_\_

Sample No.	Pump No.	Flow Rate	Time On	Time Off	Results
------------	----------	-----------	---------	----------	---------

Location \_\_\_\_\_

Sample No.	Pump No.	Flow Rate	Time On	Time Off	Results
------------	----------	-----------	---------	----------	---------

Location \_\_\_\_\_

HEA-CENT-00112

Sampling Media: Air Analyze For: PMS White & Associates

Yellow: Lab

Pink: Client



## Asbestos Abatement Services, Inc.

11 North Parkway Square ■ 4200 Northside Parkway, N.W. ■ Atlanta, GA 30357 3020 ■ (404) 264-9053

### AIR SAMPLE DATA SHEET

AASI Job No.: 72033		Date: 11/8/87			
Collected By: Tony Bass		Analyzed By: Geo-Environmental			
Couriered By: AASI		Date Analyzed: 11/10/87			
PCM/6	LV-5	2.7 L/M	0805	1540	0.004 f/cc
Sample No.	Pump No.	Flow Rate	Time On	Time Off	Results
Area sample - Outside the work area, Inside the clean room of the decontamination chamber.					
Location					
PCM/7	LV-2	2.7 L/M	0810	1530	Overloaded filter
Sample No.	Pump No.	Flow Rate	Time On	Time Off	Results
Personal sample - Inside the work area in mechanical room.					
Location					
PCM/8	LV-1	2.7 L/M	0820	1515	Less than 0.002 f/cc
Sample No.	Pump No.	Flow Rate	Time On	Time Off	Results
Area sample - Outside the work area by the decontamination chamber.					
Location					
Sample No.	Pump No.	Flow Rate	Time On	Time Off	Results
Location					
Sample No.	Pump No.	Flow Rate	Time On	Time Off	Results
Location					
Sample No.	Pump No.	Flow Rate	Time On	Time Off	Results
Location					
Sample No.	Pump No.	Flow Rate	Time On	Time Off	Results
Location					
Sample No.	Pump No.	Flow Rate	Time On	Time Off	Results
Location					

HEA-CENT-00113

Sampling Media: Air Analyze For: PMS White & Associates

White: Job

Yellow: Lab

Pink: Client

11-0502





**Asbestos Abatement Services, Inc.**

11 North Parkway Square ■ 4200 Northside Parkway, N.W.

Atlanta, Georgia 30327 ■ (404) 264-9053

Facsimile Number: (404) 261-6401

# DAILY LOG SHEET

Date: 11/6/57 AASI Job No. 72033 Job Name: Century PM: DP Page: 1 c

Time	Remarks
0800	arrived on site, workers not on site
0845	Place call into Project M. Dennis Popham
0900	Mr. Popham informed me workers would be on site.
1015	Bruce Talburt arrived on site
1030	Set up two area sampler one at the North End and one at the South End of work area
1040	Bruce began building work barrier around compressor, which will run during abatement
1115	work continues on top of fresh Groom.
1200	No asbestos would be removed until 11/7/87
	"1200-3000 work continued of D. Com at 2000 I Pick up air sample, work area was secure for the night
2030	off work site.

HEA-CENT-00114

HEA-CENT-00114

- PIS 4010584

11 North Parkway Square ■ 4200 Northside Parkway, N.W.  
Atlanta, Georgia 30327 ■ (404) 264-9053  
Facsimile Number: (404) 261-6401

Date: 11/7/87 AASI Job No.: 72033 Job Name: Century PM: DP Page: 0

HEA-CENT-00115

PIS. 4010585





# **GEO-ENVIRONMENTAL SERVICES, INC.**

electron microscopy • light microscopy • industrial hygiene

May 27, 1988

RECEIVED  
MAY 31 1988

Mr. Steve Patterson  
Asbestos Abatement Technology  
P.O. Box 47039  
Doraville, GA 30362

Reference: Air Monitoring and Air Sample Analyses  
2200 Century Tower, 10th Floor  
GES Job Number AM 280-30

Dear Mr. Patterson:

GEO-ENVIRONMENTAL SERVICES, INC. has completed the authorized sampling of asbestos in air and the subsequent laboratory analysis of these samples for the asbestos abatement project conducted at 2200 Century Tower, 10th floor. The sampling data and analytical results are summarized in the attached tables of this report.

All sampling techniques and analytical methods are in accordance with the standard procedures regulated and recommended by OSHA and NIOSH, respectively (RE: CFR 1910.1001 and NIOSH 7400-1 method as of 3/1/87.)

We are pleased to provide these services to you. If you have any questions concerning this report, please feel free to contact us.

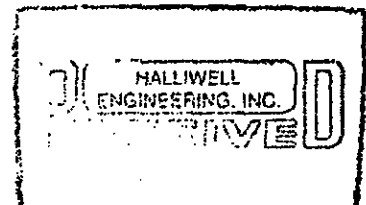
Sincerely,



J. Michael Herring  
Laboratory Manager

JMH/cr

Enclosures



APR 19 1996



## GEO-ENVIRONMENTAL SERVICES INC.

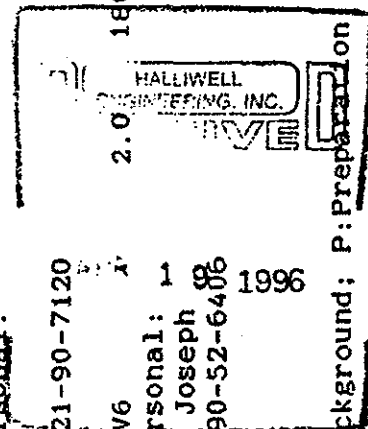
## PCM AIR SAMPLE REPORT

Client Name: Asbestos Abatement Technology  
 Project Name: 2200 Century Tower, 10th Floor  
 GES Job No.: AM 280-30

Sample I.D. Location	Pump Flow Rate (l/m)	Total Sample Volume (liter)	Total Fields Counted	Total Fibers Counted	Measured Fiber Concentration (f/cc)	Detection Limit (f/cc)	Reported Fiber Concentration (f/cc)	95% Upper Confidence Level (f/cc)
04/22/88								
0422/V1 Field Blank 1			100	0.0				
0422/V2 Field Blank 2			100	0.0				
0422/V3 E*/Personal: John Deard SS# 410-98-1830	2.0	280.0	100	16.0	0.028	0.010	0.028	N/A
0422/V4 E*/Personal: Charlie Joseph SS# 589-40-7898	2.0	286.0	100	2.0	0.003	0.010	0.010	N/A
0422/V5 E*/Personal: Brown SS# 421-90-7120	2.0	126.0	100	1.5	0.006	0.022	0.022	N/A
0422/V6 E*/Personal: Ronell Joseph SS# 590-52-6406	2.0	180.0	100	91.5	0.253	0.015	0.253	N/A

HEA-CENT-00486

\*B: Background; P: Preparation; R: Removal, cleaning, or encapsulation; O: Outside work area; C: Final test



## GEO-ENVIRONMENTAL SERVICES INC.

## PCM AIR SAMPLE REPORT

Client Name: Asbestos Abatement Technology  
 Project Name: 2200 Century Tower, 10th Floor  
 GES Job No.: AM 280-30

Sample I.D.	Pump Flow Rate (l/m)	Total Sample Volume (liter)	Total Fields Counted	Total Fibers Counted	Measured Fiber Concentration (f/cc)	Detection Limit (f/cc)	Reported Fiber Concentration (f/cc)	95% Upper Confidence Level (f/cc)
-------------	----------------------	-----------------------------	----------------------	----------------------	-------------------------------------	------------------------	-------------------------------------	-----------------------------------

04/22/88 cont.

0422/V7 2.1 63.0 100 12.5 0.098 0.043 0.098 N/A

E\*/Personal:

Daniel

SS# 019-62-8640

$$TWA = (0.028) \frac{V_1}{V_2} (140) + (0.003) \frac{V_4}{V_2} (143) + (0.006) \frac{V_5}{V_2} (63) + (0.253) \frac{V_6}{V_2} (90) + (0.098) \frac{V_7}{V_2} (30)$$

466

$$= 0.065$$

04/23/88

0423/T1 2.0 360.0 100 21.5 0.029 0.007 0.029 N/A

E\*/Personal:

B. Daniel

SS# 019-62-8640

0423/T2 2.0 760.0 100 2.5 0.002 0.004 0.004 N/A

Clean Room

0423/T3 2.0 190.0 80.0 97.5 0.316 0.014 0.316 N/A

E\*/Personal:

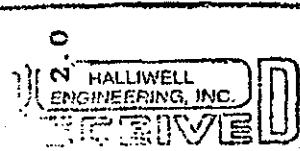
B. Daniel

SS# 019-62-8640

1996

HEA-CENT-00487

B: Background; R: Preparation; R: Removal, cleaning, or encapsulation; O: Outside work area; C: Final test



## GEO-ENVIRONMENTAL SERVICES INC.

## PCM AIR SAMPLE REPORT

Client Name: Asbestos Abatement Technology  
 Project Name: 2200 Century Tower, 10th Floor  
 GES Job No. : AM 280-30

Sample Location	Pump Flow Rate (l/m)	Total Sample Volume (liter)	Total Fields Counted	Total Fibers Counted	Measured Fiber concentration (f/cc)	Detection Limit (f/cc)	Reported Fiber concentration (f/cc)	95% Upper Confidence Level (f/cc)
04/23/88 cont.								
0423/T4 E*/Personal: B. Daniel SS# 091-67-8640	2.0	110.0	100	15.0	0.067	0.025	0.067	N/A
0423/T5 Field Blank 1			100	1.0				
0423/T6 Field Blank 2			100	3.5				

$$TWA = \frac{(0.029)(180) + (0.252)(95) + (0.067)(55)}{330}$$

$$= 0.100$$

04/26/88  
 0426/L1

E\*/Personal  
 Augustine Rigand  
 SS# 593-56-7920  
 19 1996  
 2.5  
 HALLIWELL  
 ENGINEERING, INC.  
 10000  
 187.5 100 20.5 0.054 0.014 0.054 N/A

HEA-CENT-00488

\*Background; R:Preparation; R:Removal, cleaning, or encapsulation; O:Outside work area; C:Final test

## GEO-ENVIRONMENTAL SERVICES INC.

## PCM AIR SAMPLE REPORT

Client Name: Asbestos Abatement Technology  
 Project Name: 2200 Century Tower, 10th Floor  
 GES Job No.: AM 280-30

Sample I.D. Location	Pump Flow Rate (l/m)	Total Sample Volume (liter)	Total Fields Counted	Total Fibers Counted	Measured Fiber Concentration (f/cc)	Detection Limit (f/cc)	Reported Fiber Concentration (f/cc)	95% Upper Confidence Level (f/cc)
04/26/88 cont.								
0426/L2 E*/Personal: John Bird SS# 410-98-1830	2.5	187.5	100	6.5	0.017	0.014	0.017	N/A
0426/L3 Field Blank 1			100	0.0				
0426/L4 Field Blank 2			100	2.0				
05/02/88								
0502/Q1 Field Blank 1			100	2.5				
0502/Q2 Field Blank 2			100	7.5				
0502/Q3 E*/Personal: Gray	2.0	424.0	100	28.5	0.045	0.006	0.045	N/A
0502/Q4 E*/Personal: Wilburt		412.0	100	45.0	0.054	0.007	0.054	N/A

HALLIWELL  
ENGINEERING, INC.

APR 19 1996

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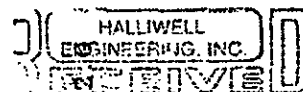
\*B:Background; P:Preparation; R:Removal, cleaning, or encapsulation; O:Outside work area; C:Final test

## GEO-ENVIRONMENTAL SERVICES INC.

## PCM AIR SAMPLE REPORT

Client Name: Asbestos Abatement Technology  
 Project Name: 2200 Century Tower, 10th Floor  
 GES Job No.: AM 280-30

Sample I.D. Location	Pump Flow Rate (l/m)	Total Sample Volume (liter)	Total Fields Counted	Total Fibers Counted	Measured Fiber Con- centration (f/cc)	Detection Limit (f/cc)	Reported Fiber Con- centration (f/cc)	95% Upper Confidence Level (f/cc)
05/02/88 cont.								
0502/Q5 E*/Personal: Gray	2.0	210.0	100	64.0	0.151	0.013	0.151	N/A
0502/Q6 E*/Personal: Wilburt	2.0	208.0	100	68.0	0.162	0.013	0.162	N/A
05/03/88								
0503/Q1 Field Blank 1			100	3.0				
0503/Q2 Field Blank 2			100	3.5				
0503/Q3 E*/Personal: Joseph	2.0	384.0	100	70.5	0.091	0.007	0.091	N/A
0503/Q4 E*/Personal: Gray		386.0	100	67.5	0.087	0.007	0.087	N/A



APR 19 1996

HEA-CENT-00490

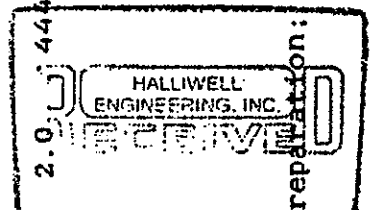
\*B: Background; P: Preparation; R: Removal, cleaning, or encapsulation; O: Outside work area; C: Final test

## GEO-ENVIRONMENTAL SERVICES INC.

## PCM AIR SAMPLE REPORT

Client Name: Asbestos Abatement Technology  
 Project Name: 2200 Century Tower, 10th Floor  
 GES Job No.: AM 280-30

Sample I.D. Location	Pump Flow Rate (l/m)	Total Sample Volume (liter)	Total Fields Counted	Total Fibers Counted	Measured Fiber Concentration (f/cc)	Detection Limit (f/cc)	Reported Fiber Concentration (f/cc)	95% Upper Confidence Level (f/cc)
05/03/88 cont.								
0503/Q5 E*/Personal: Gray	2.0	414.0	100	69.5	0.083	0.007	0.083	N/A
0503/Q6 E*/Personal: Joseph	2.0	406.0	100	75.5	0.092	0.007	0.092	N/A
05/04/88								
0504/Q1 Field Blank 1			100	5.0				
0504/Q2 Field Blank 2			100	5.0				
0504/Q3 E*/Personal: Charlie	2.0	434.0	100	94.5	0.108	0.006	0.108	N/A
0504/Q4 E*/Personal: Gray	2.0	444.0	100	85.0	0.095	0.006	0.095	N/A



HEA-CENT-00491

\*B: Background; P: Preparation; R: Removal, cleaning, or encapsulation; O: Outside work area; C: Final test

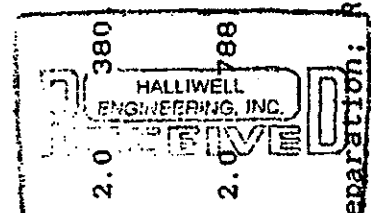
## GEO-ENVIRONMENTAL SERVICES INC.

## PCM AIR SAMPLE REPORT

Client Name: Asbestos Abatement Technology  
 Project Name: 2200 Century Tower, 10th Floor  
 JES Job No. : AM 280-30

Sample I.D.	Location	Pump Flow Rate (l/m)	Total Sample Volume (liter)	Total Fields Counted	Total Fibers Counted	Measured Fiber Concentration (f/cc)	Detection Limit (f/cc)	Reported Fiber Concentration (f/cc)	95% Upper Confidence Level (f/cc)
0504/Q5	E*/Personal: Gray	2.0	428.0	98.0	97.0	0.115	0.006	0.115	N/A
0504/Q6	E*/Personal: Charlie	2.0	430.0	100	93.0	0.107	0.006	0.107	N/A
0505/Q1	Field Blank 1			100	8.0				
0505/Q2	Field Blank 2			100	4.5				
0505/Q3	E*/Personal: Humphrey	2.0	408.0	100	74.5	0.091	0.007	0.091	N/A
0505/Q4	E*/Personal: Lupoe	2.0	380	0	0	0	0	0	0
0505/Q5	R*/Work Area	2.0	788	0	84.5	0.053	0.003	0.053	HEA-CENT-00492 N/A

APR 19 1996



2.0 Filter was wet.

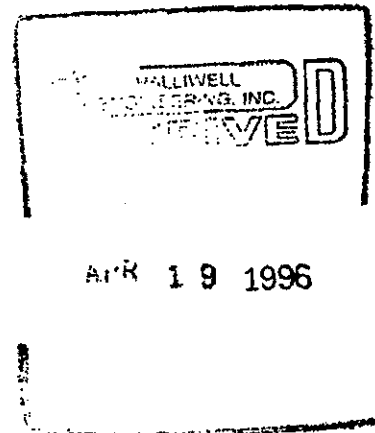
\*B: Background; P: Preparation; R: Removal, cleaning, or encapsulation; O: Outside work area; C: Final test

## GEO-ENVIRONMENTAL SERVICES INC.

## PCM AIR SAMPLE REPORT

Client Name: Asbestos Abatement Technology  
 Project Name: 2200 Century Tower, 10th Floor  
 GES Job No.: AM 280-30

Sample I.D. Location	Pump Flow Rate (l/m)	Total Sample Volume (liter)	Total Fields Counted	Total Fibers Counted	Measured Fiber Con- centration (f/cc)	Detection Limit (f/cc)	Reported Fiber Con- centration (f/cc)	95% Upper Confidence Level (f/cc)
05/05/88 cont.								
0505/Q6 E*/Personal: Sengsouis	2.0	384.0	100	75.5	0.098	0.007	0.098	N/A
0505/Q7 E*/Personal: Stevens	2.0	376.0	100	71.0	0.094	0.007	0.094	N/A



HEA-CENT-00493

\*B:Background; P:Preparation; R:Removal, cleaning, or encapsulation; O:Outside work area; C:Final test



GEO-ENVIRONMENTAL SERVICES, INC.  
ATLANTA, GEORGIANo. 88C

## INTER-OFFICE CHAIN OF CUSTODY

1. Package Delivered by: N/A Date: \_\_\_\_\_
2. Package Received by: N/A Date: \_\_\_\_\_
3. Condition of Package on Receipt: good fair poor (circle one)  
if poor, explain: \_\_\_\_\_
4. Client Name: Asbestos Abatement Technology
5. Job Name/Number: 2200 Century Tower, 10<sup>th</sup> Floor
6. GES Job Number: Am 280-30
7. Package Opened by: N/A Date: \_\_\_\_\_
8. Type of Sample(s): ASA BSA AM TEM SEM (circle one)  
Other: \_\_\_\_\_
9. Condition of Samples: good fair poor (circle one)  
if poor, explain: \_\_\_\_\_
10. Number of Samples Received: (7) (4) (22)
11. GES Sample Log No. (s): 7709-7717 BA-7248-7254 MA-7915-7918 IS-7792-7797; 7798-7803; 7804-7809; 7810-7816
12. Samples Analyzed by: GH BH MA IS Date: \_\_\_\_\_  
4/23 4/27 4/26 5/2-5/6
13. Results Reported by: (5) (7) (4) (25) Date: \_\_\_\_\_
14. Report Given to Typist Time: 3pm Date: 5/26/88
15. Report Typed by: CAR Date: 5/28/88
16. Cover Letter Typed by: CAR Date: 5/27/88
17. Invoiced by: CAR Invoice #: 7987 Date: 5/27/88
18. Report Proofread by: KNS Date: 5/29/88
19. Report Corrected by: CAR Date: 5/30/88
20. Report Signed Off by: JMLT Date: 5/30/88
21. Duplicated by: CAR Date: 5/30/88
22. Mailed by: \_\_\_\_\_ Date: \_\_\_\_\_

Comments: \_\_\_\_\_

\*If package has sustained substantial damage, stop load 1996  
contact project manager and shipper.

HEA-CENT-00494



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**ATEC**

# PROJECT INSPECTION REPORT

Reply To:

District Offices: Atlanta/Baltimore/Washington  
Chicago/Cincinnati/Dallas/Denver/Houston  
Indianapolis/Louisville/Norfolk

PROJECT Century Center JOB NO. 32-88005  
LOCATION 2200 Century Parkway CONTRACTOR A.A.T.  
CLIENT Property Management Systems DATE 4-16-88  
REMARKS:

Saturday: 8:00am to 12:00pm

10<sup>th</sup> Fl.: Steve Patterson, crew moved equipment  
onto floor in preparation for start of job.  
Equipment moved in this floor was found by machine  
to meet project specifications

\* Forsee possibility of delay in start of job on  
Monday (4-18-88). Due to the fact that the demo  
contractor worked only 1/2 day today, and has no  
plans to work tomorrow.

Test ran /

Visitors: None  
Employees: 7 men

HEA-CENT-00495  
PIS 4009656

**Associates**Geotechnical and Materials Engineers  
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Materials Testing**ATEC****PROJECT INSPECTION  
REPORT**

Reply To:

District Offices: Atlanta/Baltimore/Washington  
Chicago/Cincinnati/Dallas/Denver/Houston  
Indianapolis/Louisville/Memphis

PROJECT Century Center JOB NO. 32-88005  
 LOCATION 2200 Century Parkway CONTRACTOR A.A.T.  
 CLIENT Property Management Systems DATE 4-17-88  
 REMARKS:

Sunday: 10:00 to 2:00 pm

10<sup>th</sup> Fl.: Steve Patterson: Windows removed and  
 boarded in preparation for Negative Air Hookup.

test: RANK & Ambient test for background.  
 visitors: None  
 Employees: 2

HEA-CENT-00496

PIS 4009657

1300 Williams Drive  
Marietta, GA 30066-8200  
(404) 427-8458

P.W.S.

**CLIENT**

**AIR CONTAMINANT**

ANALYTICAL METHOD NIOSH 7400A

## SAMPLING RECORD SHEET

**LOCATION**

## SAMPLING CONDUCTED BY

**SAMPLES ANALYZED BY**

Sample #	Worker's Name	Job Location & Description	Date(s)	Sampling Time Start - Stop	Total Mins.	Air Flow Rate l/m	Air Vol. in Liters	Analytical Results		
								Fibers/ Field cc	Fibers/ cc	Date Limi
1343	Ambient Air	Outside Bld. roof, N side Background	4-17-88	12:00 pm 4:20	260	12	3120	$\frac{12.5}{100}$	0.002	0.001
1344	Before start of work	Outside Bld. roof, S side Background		12:00 pm 4:20	260	12	3120	$\frac{15.5}{100}$	0.002	0.001
1345		Outside Bld ground, N side Background		12:00 pm 4:20	260	12	3120	$\frac{13.5}{100}$	0.002	0.001
1346		10th Fl., Work Area, N side Background		12:20 4:40	260	12	3120	$\frac{28}{100}$	0.004	0.001
1347		10th Fl. Work Area, S side Background		12:20 4:40	260	12	3120	$\frac{31.5}{100}$	0.005	0.001
1348		9th Fl. outside Mech Room Background		12:30 4:50	260	12	3120	$\frac{18}{100}$	0.003	0.001
1349		9th Fl. Hallway Background		12:30 4:50	260	12	3120	$\frac{16.5}{100}$	0.002	0.001
1350		10th Fl. Stairwell #1 Background		12:25 4:45	260	12	3120	$\frac{18.5}{100}$	0.003	0.001

PIS 4009658

HEA-CENT-00497

11) The Permissible Exposure Limit (PEL) of asbestos is 0.2 fibers per cubic centimeters.

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## PROJECT INSPECTION REPORT

Reply To:

District Offices: Atlanta/Baltimore-Washington/  
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Indianapolis/Louisville/Memphis

PROJECT 2200 Century Center JOB NO. 32-88005  
LOCATION 2200 Century Parkway CONTRACTOR A.A.T.  
CLIENT Property Management Systems DATE 4-18-88  
REMARKS:

Monday: 8:00 to 5:00 pm

10<sup>th</sup> Floor: Steve Patterson; Crew began wet wiping,  
and prepping. Both rest rooms prepped. Negative air machines  
were connected and powered up. Compressor for Aspirator  
emplaced in stairwell #2.

\* Problems: Met with Tom Grubbs to discuss small problems,  
i.e.: Preexisting condition of elevator, crack in top right corner  
of 3<sup>rd</sup> window on South Side, hole from roof in 17<sup>th</sup> floor  
restroom, and shutdown HVAC. Also compressor in stairwell #2  
was determined to load on 9<sup>th</sup> floor. Steve Patterson said  
he would have a styrofoam box built around it  
in an attempt to bring the house level down.

Visitors: Home Neil Palmer (ATEC) YUENE LIANG (1154)  
Employees: 15

HEA-CENT-00498

PIS 4009659

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Reply To:

District Offices: Atlanta/Baltimore-Washington/  
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Indianapolis/Louisville/Norfolk

PROJECT Century Center JOB NO. 32-98009  
LOCATION 3300 Century Hall CONTRACTOR A.T.  
CLIENT P.M.S. DATE 4-14-98  
REMARKS:

Tuesday: 8:00 A.M. - 5:00 P.M.

10th Floor: Steve Patterson: Crew completed work of  
install construction of Decan signature.  
Sight of work was not allowed to proceed  
and crew brought noise down - noticeable  
in 10th Floor. Collected samples of pipe joint compound  
in Mechanical Room.

Visitors: Dr. Wang, Neil Palmer (ATEC)  
Problemas: NONE  
Employees: 14 men

HEA-CENT-00499

PIS 4009660

## CHAIN OF CUSTODY FORM

PRUDENTIAL BUILDING ID NUMBER 2200 CENTURY CENTER  
 BUILDING NAME 2200 CENTURY CENTER  
 ADDRESS 2200 CENTURY PARKWAY  
GA.  
 ARCHIVE SAMPLE NUMBERS FROM 1A TO 4D  
 TOTAL NUMBER OF SAMPLES 16  
 FULL NAME AND EMPLOYER OF SAMPLE COLLECTOR Lloyd Nuckols  
ATEC.  
 DATE COLLECTED 4-15-88

EXACT LOCATION (Floor Number, Specific Area or particular Room, Corridor or Office). The location where the sample is taken should also be noted on building drawing if available.

ATEC  
 Sample #  
 1 2 3 8  
 1 2 3 8  
 1 2 4 0  
 12 41  
 12 42  
 12 43  
 12 44  
 12 45  
 12 46  
 12 47  
 12 48  
 12 49  
 12 50  
 12 51  
 12 52  
 12 53

ARCHIVE SAMPLE NUMBER	TYPE OF MATERIAL
1A	Fire Proofing
2A	
3A	
4A	
1B	
2B	
3B	
4B	
1C	
2C	
3C	
4C	
1D	Joint Compound
2D	
3D	
4D	

10<sup>th</sup> Floor Column Beams Located on Bluepr  
 Lines 4C on Sheet A of 2-3,

4C
4C
4C
3A
3A
3A
3A
3B
3B
3B
3B

10<sup>th</sup> A. Mech Room, Elbow Above Water Hea  
 Tee Joint compound above H&A  
 insulation & compound as HVA  
 connection into top of Hea

From  
 (Print Name and  
 Affiliation)

Date of  
 Transfer

To  
 (Print Name and  
 Affiliation)

Date  
 Received

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_

NOTE: PLEASE PRINT OR TYPE ALL INFORMATION.

HEA-CENT-00500

PIS 4009661



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**ATEC**

## PROJECT INSPECTION REPORT

Reply To:

District Offices: Atlanta/Baltimore-Washington/  
Chicago/Cincinnati/Dallas/Denver/Houston/  
Indianapolis/Louisville/Norfolk

PROJECT Century Center JOB NO. 32-98005  
LOCATION 2200 Century Parkway CONTRACTOR A.A.T.  
CLIENT Property Management Systems DATE 4-20-88  
REMARKS: Property M

Wednesday: 8:00 to 5:00

10<sup>th</sup> Fl.: Steve Patterson: Crew continued prep on floor: 6 mil poly inside and out, access to floor (10<sup>th</sup>) on elevators Two & Three was closed with plywood 3/4" and 6 mil poly on both sides. Showers, waste water filtration system, and compressor for type C respirators were installed. Mech room was prepped with 2 layers of 6 mil poly and all equipment is covered.

\* attended meeting with PMS and AAT in Bld. 1800. Discussed overspray in air shaft of mechanical room. It was decided that it would be best to leave this alone until a later date at which time entire airstair could be done as a whole.

Visitors: Neil Palmer (ATEC)  
Employees 18 men

HEA-CENT-00501

PIS 4009662

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District Offices: Atlanta/Baltimore-Washington/  
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Indianapolis/Louisville/Worfolk

PROJECT Century Center JOB NO. 32-98005  
LOCATION 2700 Century Parkway CONTRACTOR AAT  
CLIENT Property Management Systems DATE 11-21-88

REMARKS:

Thursday: 8:00am to 5:00pm

10<sup>th</sup> Fl.: Steve Peterson, Crew completed building of  
decun. chamber. Posted signs at all entrances to  
Floor. Sealing tile removal to begin at 8:00am Friday  
(11-22-88).

\* Problems: Did walk through with Neil Palmer (Atec)  
everything -k w/ except the following; No fire extinguisher  
near stairwell or Elevator #1, No fire extinguisher or  
lockup procedures in Clean room. Contractor was  
notified of this and is to correct these things  
ASAP.

Visitors: Neil Palmer.  
Employees: 15 men

HEA-CENT-00502

PIS 4009663

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PROJECT Century Center JOB NO. 32-88005  
LOCATION 2200 Century Parkway CONTRACTOR A.A.T.  
CLIENT Property Management System DATE 4-23-88

REMARKS:

Saturday: 8:00 to 5:00

10<sup>th</sup> Fl.: Steve Patterson: Crew continued to remove  
and lag ceiling tile, tile is being placed in holding  
Area for removal on Sunday, is to be stored in room  
on 8<sup>th</sup> Fl.

\* Problem: Counts in work Area still a little high  
but appear to be dropping.  
Visitors: NONE  
Employees: 11 men

HEA-CENT-00503

PIS 4009664

- 1) The Permissible Exposure Limit (PEL) or threshold is 0.2 liters of fibers per cubic centimeters of  
2) BDL - Below Detection Limit. ppm-parts per million parts of air  
mg/m3-milligrams per cubic meter of

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## PROJECT INSPECTION REPORT

Reply To:

District Offices: Atlanta/Baltimore-Washington/  
Chicago/Cincinnati/Dallas/Denver/Houston/  
Indianapolis/Louisville/Norfolk

PROJECT Century Center JOB NO. 32-98605  
LOCATION 2300 Century Parkway CONTRACTOR AAT  
CLIENT Century Management Systems DATE 4-24-88

REMARKS:

Summary: 9:00 am to 11:00 am

10<sup>th</sup> Fl: Service Ductwork: Crew removed ceiling  
1.0' from floor, slid on 8<sup>th</sup> Fl. Pulled ductwork  
and track and began removal of ACM (12' x 8' x 11' x 5')  
from floor.

\* Plumbing: Leakage from shower occurred but  
was cleaned up immediately. NO DAMAGE  
Visitors: None  
Employees: 15 men

HEA-CENT-00505

PIS 4009666



1300 Williams Drive  
Marietta, GA 30066-0299  
(404) 421-8456

# SAMPLING RECORD SHEET

CLIENT

Property Management Systems

LOCATION

2200 Century Parkway

4009667

AIR CONTAMINANT

ASBESTOS

SAMPLING CONDUCTED BY

Wayne Tucker

ANALYTICAL METHOD

NIOSH 7400A

SAMPLES ANALYZED BY

Wayne Tucker

PIS

Sample #	Worker's Name	Job Location & Description	Date(s)	Sampling Time Start - Stop	Total Hrs.	Air Flow Rate l/m	Air Vol. In Liters	Analytical Results		
								Fibers/Field	Fibers/cc	Fibers/meter Limb
1309	Ambient Air	Ambient Air Work AREA NA.	4-24	12:00 3:00	180	3.5	630	112.5/100	0.086	0.008
1310		Work AREA Commons Room		12:00 3:00	180	3.5	630	101/100	0.079	0.008
1311		Negative Air Output		12:00 4:20	266	12.0	3120	11/100	0.001	0.001
1312		Outside Bld and Fl		12:00 4:20	266	12.0	3120	15/100	0.002	0.001
1313		Clean room		12:00 4:20	266	12.0	3120	60/100	0.009	0.001
1314	Blank	Lot # 723K057	4-24	NA NA	NA	NA	NA	0/100	NA	NA

HEA-CENT-00506

1) The Permissible Exposure Limit (PEL) of asbestos is 0.2

2) BDL - Below Detection Limit

LE/CC Fibers per cubic centimeters of air  
pm-Parts per million parts of air  
mg/M3-Milligrams per cubic meter of

ASBESTOS ABATEMENT TECHNOLOGY

DISPOSAL FORM

Date: 4-25-88

Generator (Building Owner)

Name: CENTURY PARK Address: ATLANTA, GA

Contact Person: \_\_\_\_\_ Telephone No. ( ) \_\_\_\_\_

Contractor: AAT

HAULER:

Company Name: AAT Drivers Name: E. TELISMAI

Address: 5726 NEW TEACHES RD

City: CHANDLER State: GA Zip: \_\_\_\_\_

Phone: ( ) 459-0340

LANDFILL:

Name of Facility DONZI Owned By MCDUGALD

Operated By II

Address: 100 Donzi Ln.

City: Atl. State: GA Zip: 30316

Phone: ( ) 622-3389

Description of Materials to be disposed: ACM CEILING TILE

Approximate Volume of Materials Received: \_\_\_\_\_

Type of Container Utilized: 6 MIL POL BAGS

Containers Labeled: Yes / No \_\_\_\_\_

I certify that the landfill has been approved for disposal of asbestos by EPA per regulations (40 CFR 61) and Sections 172.101 and 173.1090 of the DOT regulations (49 CFR). The delivered material will be covered with 6 inches of (15 cm) of non-asbestos material within 24 hours.

[Signature]  
(Landfill Owner/Operator)

\*To be completed for each load delivered to receiving landfill.

**DONZI LANE LANDFILL**

TELEPHONE: 622-3389

IF NO ANSWER CALL: 351-6301

Customer's Order No.		Date		4-25-1996	
Name		Asbestos Abate Tech			
Address					
CN		1475			
PAID BY	CASH	CHECK	CREDIT	DEBIT	PAID OFF
QUAN	DESCRIPTION			PRICE	AMOUNT
	ASBESTOS				55000
	36.6 cu yds				
	Century Pl - Atl.				
	AT+T - Ivy St Atl				
	CDC - Chamblee				
*Eddy Tolson					
All claims and returned goods MUST be accompanied by this bill.					
361721 Received By				TAX	
				TOTAL	

10-10

A. B. PRINTERS &amp; OFFICE SUPPLY INC. JONESBORO, GA 30143

HEA-CENT-00508

PIS 4009669



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## PROJECT INSPECTION REPORT

Reply To:

District Offices: Atlanta/Baltimore-Washington/  
Chicago/Cincinnati/Dallas/Denver/Houston/  
Indianapolis/Louisville/Norfolk

PROJECT Century Center JOB NO. 32-88005  
LOCATION 2200 Century Parkway CONTRACTOR A.A.T.  
CLIENT Property Management Systems DATE 4-25-88  
REMARKS:

Monday: 8:00 to 5:00pm

10<sup>th</sup> Fl.: Steve Patterson; Crew wet wiping  
ceiling lights and moving them to storage area  
on 8<sup>th</sup> floor. Also wet wiped most of grid and  
or preparing it for transport to dump.

\* Problems: Have not yet received documentation  
on 3 workers.

Tests: ran 5 Ambient Air test

Visitors: NONE

Employees: men

HEA-CENT-00509

PIS 4009670

HEA-CENT-00510



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## PROJECT INSPECTION REPORT

Reply To:

District Offices: Atlanta/Salt Lake City/Washington/  
Chicago/Cincinnati/Dallas/Denver/Houston/  
Indianapolis/Louisville/Memphis

PROJECT Century Center JOB NO. 32-88005  
LOCATION 2200 Century Parkway CONTRACTOR A.A.T.  
CLIENT Procter Management Systems DATE 4-22-88  
REMARKS:

Friday: 8:00 am - 5:00 pm

1st Fl: Since Tompkins, some Logansport of  
ceiling tile was wiring foil backs and wrapping  
in 2 layers of mill poly. Contractor installed temporary  
doors with locks on Silverwell and Silverwell #1.  
Fire extinguishers in clean room, however a decan procedure  
board has not yet been posted. Workers on PAPR.  
Grade "D" test performed on Type C respirator.

\* Problem: Fiber counts in work area high  
Advised contractor to ~~use~~ utilize the airless mist  
gun more in the future  
Employees: 15 men  
Visitors: Name Greg Hedrick (GEO-Environmental Services.)

HEA-CENT-00512

PIS 4009673

HEA-CENT-00513

GEO-ENVIRONMENTAL SERVICES, INC.

Grade D Test

Client: AAT Date: 4/22/88  
Project: Century Tower 10th floor GES Representative: Greg Hedrick  
GES Job Number: AM 280-30

Oxygen (O<sub>2</sub>) 20.0 %  
Oil Mist < 5.0 Mg/M<sup>3</sup>  
Carbon Monoxide (CO) < 20 PPM  
Carbon Dioxide (CO<sub>2</sub>) < 1000 PPM  
Water Vapor 2.5 Mg H<sub>2</sub>O/Liter

Test performed by Greg Hedrick

Grade "D" Air Requirements

Oxygen : 19.5 - 23.5%  
Carbon Monoxide : <20 ppm  
Carbon Dioxide : <1000 ppm  
Oil Mist : <5 MG/M<sup>3</sup>  
Water Vapor : The compressed gas association standard does'nt specifically establish a limit for moisture.

HEA-CENT-00514

PIS 4009675

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## PROJECT INSPECTION REPORT

Reply To:

District Offices: Atlanta/Baltimore-Washington/  
Chicago/Cincinnati/Dallas/Denver/Houston/  
Indianapolis/Louisville/Norfolk

PROJECT Century Center JOB NO. 32-88005  
LOCATION 2200 Century Parkway CONTRACTOR A.A.T.  
CLIENT Property Management Systems DATE 4-26-88  
REMARKS:

Tuesday: 9:00am to 5:00pm

10<sup>th</sup> Fl. ; Steve Patterson: Crew continues to prepare  
ceiling grid for transport to disposal site.  
Electrical conduit being removed and prepared for  
load out also.

Problems: none  
Visitors: Neil Palmer (ATEC)  
test: ran 5 ambient Air  
Employees: 17 men

HEA-CENT-00515

PIS 4009676

### SAMPLING RECORD SHEET

2200 Century Parkway

Clayton M. Clark

Sample #	Worker's Name	Job Location & Description	Date(s)	Sampling Time Start - Stop	Total Hrs.	Air Flow Rate l/m	Air Vol. In Liters	Analytical Results		
								Fibers/Field	Fibers/cc	Dosimetry Li
	Ambient Air	10th Fl. WORK AREA overlapping high speeds	4-26	10:30 am - 1:30 pm	180	3.5	630	$\frac{30.5}{100}$	0.023	0.000
		WORK AREA		10:30 am - 1:30 pm	180	3.5	630	$\frac{27}{100}$	0.021	0.000
		Clean Room		10:30 am - 2:50 pm	260	12	3120	$\frac{23.5}{100}$	0.003	0.000
		Negative Air Output		10:30 am - 2:50 pm	260	12	3120	$\frac{6}{100}$	BOL	0.000
		Ground Fl. Outside Bld.		10:30 am - 2:50 pm	260	12	3120	$\frac{14.5}{100}$	0.002	0.000
		Q.A. Duplicate W.A.		10:30 am - 2:50 pm	180	3.5	630	$\frac{32}{100}$	0.024	0.000

HEA-CENT-00516

- 1) - The Permissible Exposure Limit (PEL) of asbestos is 0.2 LE/CC fibers per cubic centimeters  
2) BDL - Below Detection Limit. pym-Parts per million parts of air  
mg/M3-Milligrams per cubic meter



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## PROJECT INSPECTION REPORT

Reply To:

District Offices: Atlanta/Baltimore-Washington/  
Chicago/Cincinnati/Dallas/Denver/Houston/  
Indianapolis/Louisville/Norfolk

PROJECT Century Center JOB NO. 32-38005  
LOCATION 2200 Century Parkway CONTRACTOR A.A.T.  
CLIENT Property Management Systems DATE 4-27-88  
REMARKS:

Wednesday: 12:00pm to 11:00pm

10th Fl. Steve Patterson: Crew still in process of  
preparing ceiling grid and electrical conduit for  
transport to disposal area. Ceiling grid down  
and being wrapped in 2 layers of 6 mil poly.  
Conduit removal is nearly completed also, all  
material removed on floor is being wrapped in  
2 layers of 6 mil poly.

\* Problems: At approx. 4:10 pm A.A.T. worker  
cut exit light conduit on the Parkway side  
of Bld. which set off Alarm for Fire.  
Occupants of bld. evacuated bld. A.A.T. workers  
continued to work, and maintenance workers  
were notified of what happened. Elevators  
continued to work once alarm was cut off,  
but improperly. Elevator repairman was called  
in, however system was found in proper order  
At approx. 11:00pm elevators were back to  
proper order when maintenance worker found  
Fuse on ground fl. blew and replaced it.

Visitors: Larry & Rob from bld. maintenance  
Bob Cline (A.A.T.)

Employees: 13 men.  
test: 5 Ambient Air

HEA-CENT-00517

PIS 4009678

2200 Century Parkway

Upper Middle  
Lower Middle

Sample #	Worker's Name	Job Location & Description	Date(s)	Sampling Time Start - Stop	Total Mins.	Air Flow Rate l/m	Air Vol. In Liters	Analytical Results		
								Fibers/Field	Fibers/cc	Date Limit
	Ambient Air	10th Fl. Work Area Prep of grid & standard for Disposal	4-27	3:00pm 6:00pm	180	3.5	630	26 100	0.020	0.008
		10th Fl. WORK AREA		3:00pm 6:00pm	180	3.5	630	28.5 100	0.022	0.008
		10th Fl. Clean Room		3:00pm 7:20pm	260	12	3120	47.5 100	0.007	0.001
		10th Fl. Neg Air Output		3:00pm 7:20pm	260	12	3120	9.5 100	BDL	0.001
		10th Fl Stairwell #1		3:00pm 6:00pm	180	3.5	630	13.5 100	0.010	0.008

LE/gg Fibers per cubic centimeters of  
ppm-Parts per million parts of air  
mg/l-Milligrams per cubic meter of

HEA-CENT-00518

**Alec Associates,**  
Geotechnical and Materials Engineers  
A subsidiary of American Testing  
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Subsurface Exploration  
Engineering Geology  
Materials Testing

**ATEC**

## PROJECT INSPECTION REPORT

Reply To:

District Offices: Atlanta/Baltimore-Washington/  
Chicago/Cincinnati/Dallas/Denver/Houston/  
Indianapolis/Louisville/Norfolk

PROJECT Century Center JOB NO. 32-88005  
LOCATION 2200 Century Parkway CONTRACTOR AAT.  
CLIENT P.M.S. DATE 4-28-88

REMARKS:

Thursday: 2:00pm to 12:30pm

10<sup>th</sup> FL Steve Patterson: Crew is nearing completion of prep on demolished materials. I was informed by Contractor that the remaining conduit (approx 50%) is to remain in place until clean air is achieved at which time he will bring in electrician to isolate fire alarm circuit in 10<sup>th</sup> FL before removal of such. Crew began load out of grid conduit and sheetrock at 7:00pm. TUNER core almost 50% exposed.

\* Problem: At approx 4pm negative air machines were lost from system due to demolished overhead at perimeter falling on exhaust hoses causing panels connected to plywood ~~ceiling~~ at window to come off. Negative air was maintained at 0.02 and no emissions of A.C.M. occurred. System was repaired promptly.

At 10:55pm door to elevator became jammed during loadout of grid & conduit and had to be freed in order to unload elevator. Once freed at 12:30pm, elevator was functioning, but doors would not close properly. Contractor halted work for night. Load out to continue on 4-29-88 provided elevator is functioning properly. Cause was not apparent. Start up of gross removal now delayed to 4-30-88.

Visitors: ~~None~~ Neil Palmer (ATEC)

Employees 18 men test 5 ambient air

PIS 4009680

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